WISCONSIN
TRAFFIC SAFETY REPORTER
SUMMER 1998

SPECIAL ISSUE

TRAFFIC CALMING

Street redesign for health and safety

John Evans
Director

Bureau of Transportation Safety, Wisconsin Department of Transportation

"What a great concept for linking transportation safety, Safe Communities and public health!" says Director John Evans. In an earlier life, Evans was a city planner and long-time WisDOT administrator for local transportation issues.

According to Evans, the level of interest and activity in traffic calming is unprecedented. Safety professionals are working with state, regional and local planners and traffic engineers and with community groups to decrease crashes and improve the quality of life.

In the few months since he assumed leadership of highway safety for the state, Evans has seen the new federal transportation bill, TEA-21, encourage increased and safer pedestrian and bicycle commuting; he has heard the Surgeon General encourage increased walking and biking for better health; and has been energized by the high level of interest on the part of state and local planners and engineers in producing roadways that encourage these healthy activities and decrease pedestrian and bicyclist deaths and injuries.

We hope this special edition of the Bureau of Transportation Saftey (BOTS) *Traffic Safety Reporter* will serve as a timely introduction to Traffic Calming in Wisconsin. In it, our federal partners give their perspectives, University of Wisconsin engineers provide some history and guidelines, we describe recent trainings and pilot projects, and we also provide a resource list.

Please let us know if you are interested in receiving further information or training on this or other topics, and please fill out the enclosed postcard and return it to BOTS, so that we can serve you better.

What is traffic calming?

Traffic calming measures are physical changes in the alignment of a street which cause motorists to reduce their speed based on their perception of what is safe. Walkers, joggers, bicyclists and motorists all share residential streets, and in an increasing number of communities traffic engineers are working with safety and community advocates in order to slow traffic without disrupting its flow, reduce the number of vehicle trips, and encourage healthful activities such as walking and bicycling.

Solving neighborhood traffic problems — *Getting started*

By Stephen Pudloski, UW-Madison

Local governments often have difficulty responding effectively to residents' concerns about traffic in their neighborhoods. This difficulty stems from local government's role of balancing (1) the need to maintain a public street system that provides safe and efficient travel to the motoring public with (2) the rights of abutting property owners to enjoy their property along with their piece of the public street. How this balance has been accomplished has changed over the years.

Grid street plan

Up until the 1940s streets were usually planned in a grid pattern, with all residential streets carrying about equal traffic loads with direct connections to an arterial street. The heavy traffic was carried on the arterial streets that were lined with business and some multi-family land uses. But traffic has increased significantly and most urban governments have not increased the capacities of their arterial streets or intersections. Congested arterials and intersections often result in a diversion of through traffic along a parallel residential street in a grid system.

Continued on page 3

Traffic calming techniques

Making motor vehicle lanes narrower, and putting in lanes for bicycles.

Speed bumps, traffic circles and sidewalk extensions.

Planting more trees along streets to increase the motorist's sense of speed.

On straight streets adding slight curves.

Adding pedestrian islands which serve as refuges when crossing busy streets.

Making bulges at corners which require motorists to corner more slowly.

ITE guidelines for streets in traditional neighborhoods

By Professor Ed Beimborn, UW-Milwaukee

The Institute of Transportation Engineers (ITE) has issued new guidelines for the design of streets in traditional neighborhoods. These guidelines provide an alternative approach for engineers to use to lessen automobile impacts in local areas. Past guidelines assumed that development would follow a conventional suburban pattern with separated land uses and streets that concentrated traffic on arterials. They assumed that nearly all travel would require an automobile.

The new guidelines look at local streets and neighborhoods in a different way. Streets should be considered areas that are shared spaces in which the needs of pedestrians and bicyclists are given as much or greater weight than the automobile. These guidelines were developed to give engineers more options in street design and a basis to use different design parameters.

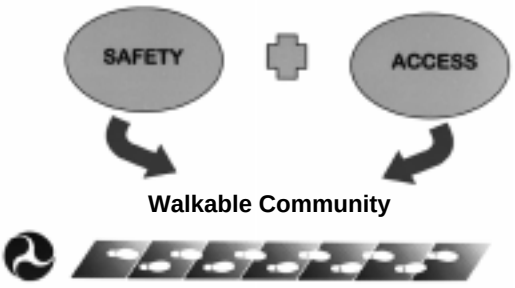
Some key concepts of the new guidelines are:

- The design of street patterns should provide an interconnected network of alternative paths through the neighborhood to disperse rather than concentrate traffic.
- Streets should be designed to promote lower speeds (about 20 mph). This is normally done through the use of a narrow curb radius — to make it necessary to slow down on curves — and narrow streets. Streets should be specifically fitted to the neighborhood rather than the reverse.
- Streets should be designed to a human scale. If there is a conflict between the competing needs of pedestrians and vehicles, the needs of the pedestrian should have priority unless public safety will be truly jeopardized.
- Designers should not think in terms of separate lanes for traffic and parking but in terms of a shared space that is used for multiple purposes. This may occasionally require vehicles to pull over and wait for others to pass.
- Emergency and large vehicles should have access to these neighborhoods, but the streets should be designed for the typical use rather than occasional use by a large vehicle.
- Creativity is encouraged. The guidelines do not provide rigid rules but stress that traffic engineers should work closely with planners and residents to create a community that is pedestrian and bicycle friendly.

By Professor Ed Beimborn, Director, Center for Urban Transportation Studies, UW-Milwaukee, (414) 229-5787, beimborn@uwm.edu.

*Article re-printed with permission from **Livable Wisconsin,** a publication of Citizens for a Better Environment, Vol. 1, Issue 2, Fall 1997.*

Elements of Walkability



The guidelines were developed by the ITE Committee on Traditional Neighborhood Design and are available from the Institute of Transportation Engineers, 525 School St., Suite 410, Washington, D.C., 20024. Phone: (202) 554-8050. The price is $20 for members of ITE and $35 for non-members. A summary of the guidelines is also on their website at www.ite.org/tnsguide.htm.

WISCONSIN TRAFFIC SAFETY REPORTER

The *Wisconsin Traffic Safety Reporter* is published by the Bureau of Transportation Safety, Wisconsin Department of Transportation. Its purpose is to promote transportation safety, to recognize worthwhile programs, to educate and to share ideas with safety professionals.

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Funded by the Wisconsin Department of Transportation and the National Highway Traffic Safety Administration.

PEDESTRIANS KILLED OR INJURED IN WISCONSIN 1988–97

Highway class	% of pedestrian fatalities	% of pedestrian injuries
Urban city streets	32%	70%
Rural city streets	4%	4%
Rural town roads	6%	3%
County trunk highways	10%	2%
Urban state highways	18%	14%
Rural state highways	25%	6%
Urban interstate highways	1%	0.4%
Rural interstate highways	3%	0.4%

Urban = An incorporated area with a population of 5,000 or more
Rural = An unincorporated area or an incorporated area with a population under 5,000

Source: WisDOT Crash Data

Solving neighborhood traffic problems

continued from page 1

Suburban street plan

Beginning in the building boom of the late 1940s and early 1950s, the balance between public mobility and property enjoyment in new developments was solved with a "suburban" street design pattern that relies on a hierarchy of residential streets. Cul-de-sacs, loop roads, and short discontinuous streets provided quiet residential streets that were connected to long, sweeping, curvilinear residential collector streets. Virtually all streets were built wide enough for two lanes of traffic and parking on both sides. There were no alleys and most lots had long, wide driveways that provided parking. Because the collectors were expected to carry much more traffic, they were built wide and straight with safe and convenient connections to arterials. Some of these new developments were built without sidewalks, so that children routinely walk, bike, and play in the street. In every subdivision this "suburban" street pattern created at least one residential street that was by design a heavy traffic carrier and by default a road that encouraged drivers to speed.

Emergency response time is a traffic calming design consideration.

Neo-traditional street design

In recognition of some of the problems inherent in the suburban street design pattern, the Institute of Transportation Engineers (ITE) has published a set of guidelines that attempts to combine the best features of the grid, suburban and neo-traditional design systems (see article on opposite page).

Residential traffic tool box

Many techniques are available to address residential traffic problems. Some of these techniques are shown in the diagram and table on pages 4 and 5. While the table identifies them as traffic calming techniques, many traffic engineers have found it helpful to group the techniques into three categories based on the primary purpose of the technique: *Traffic Control, Traffic Management, and Traffic Calming.*

Traffic Control techniques are legally enforceable restrictions placed on motorists' actions. They include stop signs, traffic signals, speed limits, and parking restrictions. Most of these regulations must have high levels of enforcement to be effective, particularly when first put in place. Traffic control techniques are usually the least expensive to implement and are therefore often tried as a first step to solve a neighborhood traffic problem.

Traffic Management techniques include physical and non-physical restrictions of the path of a vehicle, such as turn restrictions, road closures, and diverters. The purpose is to move the traffic from its existing path to another one. Therefore it is essential to use these techniques only in conjunction with an area-wide traffic management plan. Because these techniques change the travel patterns of not only those passing through, but also of everyone who lives in the neighborhood, there is often controversy generated among neighbors based on who is inconvenienced by the plan. Emergency services often voice objections to the use of traffic management because it usually increases response time and makes it difficult to find particular addresses because of the maze-like street pattern that results.

Traffic Calming techniques are physical changes in the horizontal and vertical alignments of a street that cause motorists to reduce their speed based on their own perceptions of what is a safe speed. As such, traffic calming devices are self-enforcing. However they are usually more expensive than many of the traffic control and management techniques because they require construction. Traffic calming devices include speed humps, traffic circles, chicanes and street narrowings. Some of the traffic calming devices result in obstructed views, rough rides or narrow paths, and several communities with very active traffic calming programs have elected not to use them because of liability, cost and maintenance concerns.

Implementing a residential traffic program

When neighborhoods raise a traffic concern, they often have already decided upon a solution, i.e., "We need stop signs in our neighborhood." To really understand the problem and design alternative solutions, the problem must be clearly defined by accepted traffic engineering practices: measuring speeds, volumes, illegal turns, cut through traffic, etc. Only then can alternative solutions be selected from the list of available techniques and tailored to fit the situation.

Continued on page 4

See "Resources" on pages 7 and 10.
For further information contact Stephen Pudloski, Department of Engineering Professional Development, UW-Madison
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Solving neighborhood traffic problems

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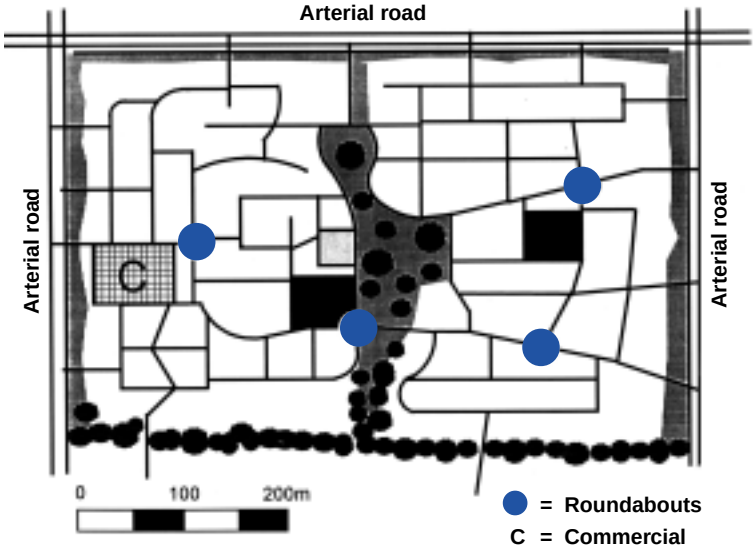
Because neighborhood traffic problems vary in nature, and the techniques are so different in application, effect, cost, and community acceptance, it takes significant time and staff resources to evaluate a situation, develop alternatives, communicate them to the neighborhood and to policy makers, negotiate or select a solution, and design and build it. Most local governments do not have active traffic calming programs and therefore they do not have the resources — whether that be staff time, expertise, consultant help, or funds for construction — to commit to such efforts.

Getting started; learning from others

The experience of local governments with active neighborhood traffic programs suggests that once established, there will be a significant number of requests from neighborhoods to solve their traffic problems. Their experience also suggests that early in the process it is important to have a policy approved by the corporate authorities that specifies what criteria will be used to identify problems, which devices will be used, how neighborhoods apply, what percentage of support represents neighborhood acceptance of a plan, and how these devices will be paid for and maintained. This reduces misunderstanding with the neighborhood and gives the staff clear marching orders.

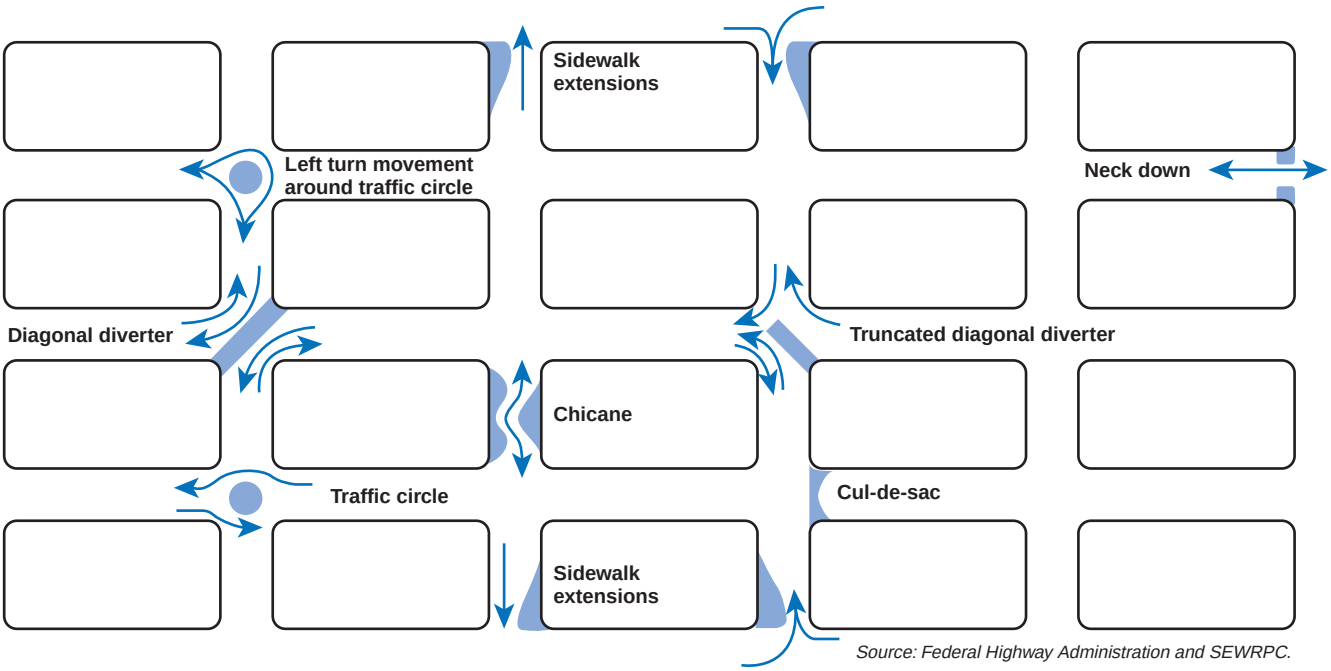
Sidewalk extensions require drivers to slow down when turning corners.

A TRAFFIC CALMED NEIGHBORHOOD



Source: Michael J. Wallworth, P.E., Alternate Streets Design, Inc.

Selected traffic calming techniques



Source: Federal Highway Administration and SEWRPC.

Traffic calming techniques

Technique	Objectives	Advantages	Disadvantages
Narrowing of road by pavement markings	Reduce speeds	Low cost	Effectiveness questioned by studies
Narrowing of road by medians or curbs	Reduce speeds, shorten crossing length	Provides space for landscaping, reduces pedestrian exposure	Cost of construction and drainage work
Alignment displacement (chicane)	Reduce speeds, divert traffic	Alters street environment, reduces conflicts	Diverts traffic to other streets, traffic delays, cost
Alter pavement surface with rumble strips, textured pavement, speed bumps or plateaus	Reduce speeds, increase awareness, reduce through traffic	Permanent presence	Potential hazard, cost, increased noise and air pollution, maintenance
Parking restrictions	Improve sight lines	Reduces conflicts	Loss of parking
Stop signs	Reduce speeds	Low cost	Breeds disrespect for signs, effectiveness questioned by studies
Road closures/diversions	Eliminate through traffic	Reduces conflicts, speeds	Reduces local access, diverts traffic to other streets, cost
Prohibit through traffic	Reduce traffic volume	Reduces conflicts	Enforcement, diverts traffic to other streets
Implement one-way streets	Reduce traffic volume	Reduces conflicts, improves traffic flow	Reduces local access, needs a “pair” street
Improved public transportation	Reduces traffic volume	Reduces conflicts, reduces air and noise pollution	Implementation difficult
Improve level of services on surrounding arterials	Reduce traffic volume	Reduces conflicts	Diverts traffic to other streets, cost
Enforcement	Improve compliance with existing laws	No alteration of street environment	Effective only while in place
Neighborhood watches	Reduce speeds, improve pedestrian compliance with laws	Local involvement	Lack of positive on-street controls
Education	Change driver and pedestrian behavior	Long-term effect, encourage individual responsibility	Indifferent attitudes, can’t reach everyone, lack of positive on-street controls
Landscaping improvements	Improve scale of street, sense of safety on sidewalks	Neighborhood enhancement with indirect traffic impact	Potential hazard to vehicles, sight line obstructions
Physical barriers: e.g., bollards, posts chains, railings	Channel pedestrians to desired crossing points	Improves driver expectation, pedestrian safety	Aesthetics, enforcement, cost
Pedestrian overpass or tunnel	Separate pedestrian and vehicular traffic by grade	Eliminates conflicts	Aesthetics, enforcement, cost
Traffic signals	Interrupt traffic flow	Assigns pedestrians the right of way, creates ‘gaps’	Increased vehicular delay, increased noise and air pollution, maintenance and energy costs

Source: Terrence DeWan & Associates, Yarmouth, ME

TRAFFIC CALMING

The Federal Perspective

Communities can encourage walking to improve public health; the pedestrian island is a mid-street refuge which helps make walking safer.

Traffic calming —

A better idea for the Safe Community

By Jim Downey, NHTSA Region V

Because traffic calming is a local solution to traffic hazards, it is also an attractive activity for "safe communities". Safe Communities, which work to establish partnerships in identifying and solving local safety problems, are the ideal setting in which to establish and support traffic calming projects as one solution to local pedestrian and bicycle crash problems. Safe Communities from Virginia to California are currently involved in traffic calming activities. For example, the Contra Costa (California) Safe Community has added traffic calming as a natural part of their traffic safety efforts.

WisDOT Bureau of Transportation Safety recently completed their third workshop in Milwaukee regarding traffic calming countermeasures (see article on page 8). The National Highway Traffic Safety Administration (NHTSA) believes that traffic calming can be an important, cost-effective program in the Safe Community tool box. Please include a traffic calming discussion when you review potential countermeasures for your community safety needs.

For more information contact Jim Downey, NHTSA Region V, (708) 503-8892 Ext. 12, JDOWNEY@nhtsa.dot.gov, or

Bill Bremer, FHWA Wisconsin Division, (608) 829-7519

Walking for better health in your community

By Nancy Chudy

In Wisconsin many local health departments, along with community organizations, have conducted community needs assessments. The community is called upon to identify health and social needs, set priorities, and develop a plan to address them. As a result communities have identified cardiovascular diseases and chronic disease prevention as priorities. One of the action steps to reduce the burden of chronic diseases in communities is to increase physical activity.

To promote physical activity in the community, environmental improvement projects such as traffic calming are undertaken to develop safe, accessible walking and bicycle paths. Environmental changes in the community, workplace and home are essential to encourage adults and children to become more active and thereby more healthy.

Health departments recognize that 55% of Wisconsin adults are sedentary, and that childhood risks, such as obesity and lack of physical activity, have recently increased dramatically. They encourage all forms of physical activity, not just strenuous exercise, to improve health. They promote physical activity as fun, easy, and part of daily life.

Health departments promote the Surgeon General's recommendation that each adult try to fit in 30 minutes of accumulated moderately intensive physical activity (walking, yard work, playing with children) for five or more days of the week. Numerous health benefits can be gained from physical activity. Regular moderate physical activity can reduce the risk of cardiovascular disease, high blood pressure, diabetes, and some cancers. It helps to control weight, and builds and maintains healthy bones, muscles and joints.

Community needs assessments have encouraged communities to collaborate with organizations that they have rarely worked with in the past to promote physical activity. They have joined forces with parks and recreation and transportation departments to improve the health and quality of life of its citizens.

For more information, contact Nancy Chudy, Wisconsin Division of Health, (608) 266-2593, chudyne@dhfs.state.wi.us.

Funding for traffic calming in TEA21

By Bill Bremer, FHWA Wisconsin Division

Traffic calming improvements were eligible on federal-aid projects even prior to the April 1998 passage of the new federal transportation legislation, the Transportation Equity Act for the 21st Century, known as "TEA-21". But TEA 21 specifically added language to allow traffic calming projects, as well as bicycle and pedestrian improvements on public streets, as eligible in the federal-aid Hazard Elimination Safety Program. As with other technical elements of TEA 21, administrative details and rule-making have to be worked out; e.g., identifying what qualifies as a traffic calming project.

In Wisconsin the program is administered by WisDOT using guidelines and procedures which identify the types of work that may be done with federal-aid funds. There are no mandatory federal requirements to use eligible work items, and, since funding is limited, WisDOT often has to restrict the types and amount of work that can be done with Hazard Elimination funds. There have been no decisions yet on possible revisions to the WisDOT guidelines, including changes as a result of TEA-21. The next solicitation for statewide Hazard Elimination project prioritization is not scheduled to begin until early 1999.

By Bill Bremer, Safety and Traffic Operations Engineer, FHWA Wisconsin Division (608) 829-7519.

For further information on funding availability and guidelines for the WisDOT Hazard Elimination Safety Program, call (608) 266-3341, or write to the Hill Farms State Transportation Building, Room 951, P.O. Box 7913, Madison, WI 53707-7913.

As directed in the ISTEA of 1991, the Federal Highway Administration, the National Highway Traffic Safety Administration, the Federal Transit Administration, and the Office of the Secretary of Transportation, with public input and meetings with bicycling and pedestrian experts from across the United States, published the *National Bicycling and Walking Study: Transportation Choices for a Changing America.* This study recommends a plan of action to achieve two goals: (1) to double the percentage of total trips made by bicycling and walking in the U.S. from 7.9% to 15.8% of all trips; and (2) to simultaneously reduce by 10% the number of bicyclists and pedestrians killed or injured in traffic crashes. Increased levels of bicycling and walking would result in significant benefits in terms of health and physical fitness, the environment, and transportation-related effects.

For details on the legislation, see the FHWA TEA-21 Fact Sheets on metropolitan planning, statewide planning and highway safety; on the Web at www.fhwa.dot.gov/TEA21/FactSheets.

Courses/Trainings

Neighborhood Design and Traffic Calming A two day workshop in Madison, Sept. 10-11. Includes an exploration of the relationship of traditional, suburban, and neo-traditional residential designs and traffic flow, how to solve neighborhood traffic problems, and three traffic calming case studies. Offered jointly by the Center for Highway & Traffic Engineering, Marquette University and the Department of Engineering Professional Development, UW-Madison. Call UW-Madison, (800) 462-0876.

Livable Neighborhoods; Rethinking Residential Streets, UW-Madison, 1996, videotape course by UW-Madison, two 90 minute videotape set. Tape 1, "The Big Picture and the Traffic Control Tool Kit"; explores the concepts and issues related to neighborhood design, crime prevention through environmental design, and residential traffic problems and solutions. Tape 2, "Three Case Studies"; demonstrates the application of the concepts discussed in Tape 1 through three case studies. Call UW-Madison, (800) 462-0876.

Effective Cycling Training: WisDOT Engineers and Planners Get a Cyclist's Education, available statewide. Offered to WisDOT staff to increase awareness and understanding of how cyclists are being trained so that they can consider the needs of bicyclists when designing roadways, and to encourage WisDOT employees to travel by bicycle. This course is offered to the general public by the Bicycle Federation of Wisconsin: (608) 251-4456, 104 King St., Suite 204, P.O. Box 1224, Madison, WI 53701-1224.

Publications and Articles

American Planning Association Guide to Traffic Calming; Techniques and Experiences, 28 pp., hardcover only, $28, (312) 786-6344

Neighborhood Traffic Control, North Central Section of the Institute of Transportation Engineers (ITE), 1994, 64 pp. Includes a list of neighborhood traffic control techniques and their expected effects on speed, volume, environmental issues and safety. Call the ITE Bookstore, (202) 863-5486. Also see *U.S. Experience with Traffic Calming* (and other traffic calming articles), ITE Journal, August, 1997.

Community Design for the Next Century; A Guidebook for Creating Pedestrian-Friendly Towns & Neighborhoods, Citizens for a Better Environment, 1997. Guidebook for local planners and developers involved in neighborhood and subdivision design and approval. Covers objectives and issues; alternative design strategies; and provides general recommendations and specific examples of land use ordinances, design guidelines, and engineering standards. Call CBE, (414) 271-7280.

Resource Manual on Crime Prevention through Environmental Design for America's Cities, United States Conference of Mayors, 1996. The manual summarizes the findings of a national city survey on crime prevention through environmental design; includes case studies that illustrate successes, with general recommendations. Call U.S. Conference of Mayors (202) 293-7330.

Reclaiming Our Streets, and pedestrian-oriented street design guidelines; City of Portland (Oregon) Traffic Management Bureau, (503) 523-3589.

"Advocating Safe Passage", *Landscape Architect Server Magazine*, Nov., 1996, regarding access for people with disabilities.

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TRAFFIC CALMING

Resources

Internet

www.its.leeds.ac.uk/primavera/p_calming.html

"A Review of Current Traffic Calming Techniques", T. Harvey (HETS), Institute of Transportation Studies, University of Leeds, UK

www.crab.wa.gov/clark/transportation/calming.html

Clark County, Washington Neighborhood Traffic Program's Tool Box; includes photographs and description of various techniques

www.walkable.org/

Walkable Community, Inc., a Florida-based nonprofit helps communities become more pedestrian-friendly.

LOCAL/STATE PARTNERSHIPS

Traffic calming activities in Wisconsin

Pedestrian Safety Road Shows

The Federal Highway Administration has developed a free, four-hour seminar and a set of tools and resources to help communities identify and address their pedestrian safety problems. Community leaders, engineers, planners, citizens and safety advocates work together during the seminar to identify their community's problems and develop preliminary strategies. Road Shows are delivered by experts in pedestrian safety and walkability.

In April nine experts were trained in a Green Bay workshop, and they are available to help other communities. Free materials available from USDOT include a 12-minute motivational videotape, an annotated list of technical resources, and a manual for local action.

Contact: JoAnne Pruitt-Thunder, WisDOT-BOTS, P.O. Box 7936, 4802 Sheboygan Avenue, Madison, WI 535707-7936, (608) 267-3154.

State of Wisconsin bicycle maps

The Wisconsin Department of Transportation and the Bicycle Federation of Wisconsin have kept a 15-year tradition alive; the 1998 Wisconsin Bike Map is now available. The map acts as a guide to the selection of travel routes, providing updated information on road characteristics for bicycling. Such detailed information leads to more appropriate and safer route selection by the bicycling public. Roads and streets designed with a variety of users in mind often have good bicycling conditions, while maintaining traffic calmed qualities. The northeast and southeast sections are available for purchase, and the other three sections will be available later this year.

Contact the Bicycle Federation of Wisconsin for copies: (608) 251-4456, 104 King St., Suite 204, P.O. Box 1224, Madison, WI 53701-1224.

Traffic calming and roundabout design workshops in Green Bay and Milwaukee

Engineers, planners and transportation officials are looking for creative new ways to deal with traffic flow in municipalities, especially at intersections. In May, Brown and Sheboygan Counties hosted traffic calming workshops presented by Michael Wallwork and funded by BOTS. Attendees included not only local officials, engineers and planners from both counties, but also traffic engineers, planners, real estate officers and project development staff from WisDOT Transportation District Three.

Interest in the topic was so high that Wallwork, director of Alternate Street Design, Inc. (see sidebar) was invited back in July to present a two-day seminar on roundabout design. Cole Runge, Brown County Planner, brought five problem intersections to be analyzed during the seminar. Students from local planning agencies and the WisDOT Transportation District Office used their new box of traffic calming tools to address these thorny traffic problems.

Steve Noel, Project Development Supervisor in District Three, and other District staff were energized by the training, and are now looking at some locations in Calumet County and the City of Sheboygan where roundabouts and traffic calming methods might be applied successfully.

District Three engineers noted that when you see a good roundabout design drawn up, it is "just pretty." Not only does traffic flow better, but the roadway is nicer to look at. They are proud that WisDOT is joining this movement with proven safety benefits. Illinois, Washington, Maryland and other states have already constructed roundabouts, and if Wallwork could have his way Wisconsin will have roundabouts in the near future. The use of roundabouts is being piloted in Wisconsin in DePere (see article on next page).

Wallwork also conducted a two-day Traffic Calming Workshop and a two-day Roundabout Design Workshop July 7-10 in Milwaukee.

The first day of the traffic calming series started by looking at the things that make a city great: efficient transit, cultural activities, greenspace, etc. The next emphasis was on how to make residential streets more people-friendly. The second day focused on using the "Charrette" process to work with neighborhood groups to discover what they see as problems, what their objectives are in addressing those problems, and to allow residents, in groups of 6-10 people, to select and locate traffic calming devices in their neighborhood to meet those objectives. A summary of each group's schemes is compiled by the engineer/planner and the neighborhood votes to pick a preferred scheme. Several case studies of Milwaukee neighborhoods were undertaken by workshop participants.

The first day of the roundabout design workshop covered capacity analysis and the basic process of designing a modern roundabout. The differences between the older, larger traffic circles, or rotaries, and modern roundabouts were discussed. The older traffic circles were 300+ feet in diameter, they had high speed merge entries, and circulating speeds of 20 to 40 mph, while modern roundabouts have central islands 5 to 150 feet in diameter, yield control entries, and circulating speeds of 10 to 20 mph. The second day involved designing roundabouts at two intersections in Milwaukee.

For further information contact Barbara Booth, WisDOT-BOTS, (920) 492-5639, BBOOTH@mail.state.wi.us.

Excerpt from *Traffic Calming; The Management of Traffic to Create Safer and Friendlier Streets for All People*, Michael J. Wallwork, P.E., Alternate Street Design, Inc., (904) 269-1851

wallwork@mediaone.net

Over the years, many engineering and planning professionals have come to understand that the best way to avoid residential traffic conflicts in the future is to design residential neighborhoods that reduce vehicular speed and the number of traffic trips. The current planning trend is to design mixed-use developments, with fine-grained street networks, utilizing short streets that have "T" or four-way intersections controlled by traffic calming devices. In addition other traffic calming devices are added at selected mid-block locations, and street pavements are narrowed to 10, 16 and 24-foot widths. On-street parking is restricted to the opposite ends of the street.

Regent neighborhood pilots Madison's traffic calming project

By Howard Mandeville

This spring daffodils were blooming in Madison's first traffic circle (mini-roundabout) at the intersection of Kendall and Grand Avenues. The yellow blooms helped establish the roundabout as part of its neighborhood and made it seem like it has always been there. But this was the first spring season for the roundabout which was built just last September as the leaves began to turn. After a year of neighborhood meetings, planning with city staff, a couple of articles in the neighborhood newsletter, and the roundabout's construction, it seemed that this roundabout represented the end of a successful process of neighborhood and city partnership. Actually, it's just the beginning. The Regent Neighborhood Association has developed a neighborhood traffic strategy that proposes a process for building in traffic calming into any planned street improvement or reconstruction when a problem such as traffic speed or volume can be documented. The neighborhood's plan matches up with Madison's Neighborhood Traffic Management Program which formalizes the ways neighborhoods can influence street improvements.

Residents living adjacent to the roundabout had a number of opportunities for input into its design and placement. First, residents in this area were active in the Regent Neighborhood Association's traffic committee meetings which inventoried traffic problem areas. Then, when the Kendall and Grand intersection was proposed because it met criteria set by the city for the pilot experiment, a majority of nearby residents signed a petition to authorize the city to go ahead with a temporary roundabout. In July 1997, a majority of these residents sent the city their ballots voting for the permanent installation.

During the testing period, neighbors were entertained by a parade of fire trucks, ambulances, and snow plows which were brought to the intersection to test their ability to drive around the circle. All made it through the intersection, including the fire department's widest ladder truck. As part of the construction of the roundabout, the city provided the initial landscaping and planting. Volunteers from the neighborhood maintain the plantings.

The Regent neighborhood is a traditional neighborhood originally designed in the first third of the 20th century with the interests of pedestrians and residents in mind as well as those traveling through by car. The grid street pattern offers many route choices. The narrow streets and sharp corners slow traffic, making it safer and more comfortable for pedestrians, bicyclists and vehicles to cross intersections. These features make our traditional neighborhood a prototype for "new urbanism" developments such as Middleton Hills near Madison.

Westward expansion of UW-Madison, the revitalization of downtown Madison as a workplace, and greater Madison's residential growth to the south and west are increasing the number of commuters who travel through our neighborhood and threaten to disrupt the balance of people and cars.

Continued on page 10

DePere's roundabout design

WisDOT has studied the feasibility of placing roundabouts in downtown DePere to improve traffic flow while maintaining its commercial character. The engineers also studied traffic problems in a DePere school zone. In both cases, traffic calming techniques and roundabout designs were considered. A preferred plan consisted of a 2-lane roadway with bicycle facilities, median and roundabout. Roger Kolb, Brown County Highway Commissioner, reports that roadway reconstruction for the year 2000 will take these suggestions into consideration.

Brookfield's "Speed Hump" Study

By Mary Jo Lange, P.E.

In April 1997, with the Board of Public Works approval, the City of Brookfield, Wisconsin, installed asphalt "speed humps" on Baythorn Way, a residential street (25 mph statutory speed limit), to minimize the cut-through traffic volume and reduce speeds. The humps are 12-by-6 feet and rise 3 inches, and they cause a less jarring bounce than parking lot speed humps. A total of 8 humps were constructed on Baythorn between Grainfield Avenue and Brookfield Road (a half mile stretch). Speed and volume studies were conducted by the police department's traffic section and by the city's engineering department; the studies were done in an area where drivers were more likely to speed because of the greater separation between the speed humps.

EFFECT OF SPEED HUMP INSTALLATION

	Prior to speed humps	6 mos. after installation
Average speed	45 mph	20 mph
% vehicles over 25 mph	100%	22%
Avg. daily traffic volume	2,948	493

It appears that the speed humps have been effective in reducing speed and traffic volume; an 84% drop in volume and a 25 mph reduction in the average speed. The extreme drop in volume might have resulted from the re-opening of Barker Road between Greenfield and Bluemound, and the construction of a new roadway, Ashbourne Lane, through the subdivision.

TRAFFIC CALMING

Local Projects

Mini-roundabouts in Madison at the intersection of Kendall and Grand Avenues

"Americans are a peculiar people ... If, in a local community, a citizen becomes aware of a human need that is not met, he (sic) discussed the situation with his neighbors. Suddenly, a committee comes into existence. The committee begins to operate on behalf of the need, and a new common function is established. It is like a miracle."

—Alexis de Toqueville

For further information contact Mary Jo Lange, City of Brookfield Engineering, (414) 782-9650.

TRAFFIC CALMING

Resources

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Wisconsin Pedestrian Planning Guidance: Guidelines for Metropolitan Planning Organizations & Communities in Planning & Developing Pedestrian Facilities, WisDOT, Sept. 1993, 17 pages. Contact: Tom Huber, WisDOT, P.O. Box 7913, Madison, WI 53707-7913, (608) 267-7757.

Wisconsin Bicycle Planning Guidance: Guidelines for Metropolitan Planning Organizations & Communities in Planning & Developing Bicycle Facilities, WisDOT, Sept. 1993, 44 pages. Contact: Tom Huber, WisDOT, P.O. Box 7913, Madison, WI 53707-7913, (608) 267-7757.

National Bicycling and Walking Study: Transportation Choices for a Changing America, USDOT FHWA Publication No. FHWA-PD-94-023.

Coming Soon

The Federal Highway Administration (FHWA) Wisconsin Division reports that three FHWA offices are working in partnership with the Institute of Transportation Engineers (ITE) to develop a series of information resources on calming traffic in urban areas and small towns along high speed rural highways. The resources will address both planning and design aspects, as well as the performance of various traffic calming measures. The resources will include:

- State-of-the-art report on traffic calming, focusing primarily on practice and experience in North America,
- One day seminar on traffic calming, and training materials that can be used by Local Technical Assistance Program centers,
- Traffic calming website and discussion group,
- CD-ROM containing a comprehensive and searchable collection of traffic calming information,
- 10-15 minute videotape on traffic calming for decision makers and lay audiences (subject to available funds).

ITE will also spearhead a National Consortium on Traffic Calming. The consortium will provide a forum for coordinating traffic calming activities among the disciplines and organizations represented, as well as provide reviews and input to FHWA on issues and research needs pertaining to traffic calming and action items needed to address them.

Contact Bill Bremer, FHWA Wisconsin Division, (608) 829-7519.

Regent neighborhood pilot project

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The Regent neighborhood, through its neighborhood association, made a commitment to neighborhood-wide solutions that avoid the temptation to move the problem down the block. In meetings hosted by the neighborhood association's transportation committee, city elected officials and staff met with over 100 residents to identify problems and possible solutions. Through this process the residents of the Regent neighborhood learned from city alders and staff that traffic calming techniques can help balance the tension between the residents' desire for safe, quiet streets and the commuters' need to get where they are going.

The mini-roundabout installed in the Regent neighborhood came in at the modest cost of $2600. And now Madison's first roundabout is working effectively at maintaining the character of a residential street that less than a year ago was on the brink of becoming a de facto "collector" street.

By Howard Mandeville, Regent Neighborhood Association, (608) 233-5080, Mndvl@aol.com

Milwaukee's Brady Street neighborhood pedestrian crossing/street re-design

This neighborhood is a mixture of commercial, entertainment, and dense residential development with major routes to downtown Milwaukee. One complex intersection whose streets do not meet at right angles provided a serious challenge to pedestrians. Temporary traffic calming techniques include bulbouts, which narrow the street and divert traffic.

Wisconsin Department of Transportation
Bureau of Transportation Safety
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